01-0187-03-3880-XXX

Institutional Review Board Meeting Minutes

22 January 1993

Science Applications International Corporation

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By:

Science Applications International Corporation
Garrison Rapmund, M.D.
Chairman, Institutional Review Board
Cognitive Sciences Laboratory
1010 El Camino Real, Suite 330
Menlo Park, California 94025

Approved For Release 2000/08/08 : CIA-RDP96-00789R003100260001-9

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION
Minutes of Institutional Review Board Meeting

The Institutional Review Board (IRB) of the SAIC Cognitive Sciences Laboratory convened at 1:05 and adjourning at 5:15 p.m. on January 22, 1993 held at the SAIC facilities in Menlo Park California.

IRB Members Attending

Byron Wm. Brown, Jr., Ph.D.
Robin P. Michelson, M.D.
Ronald Yukio Nakasone, Ph.D.
Aloma Hyang Sue Park, Esq.
Garrison Rapmund, M.D., (Chairman)
Louis Jolyon West, M.D.

IRB Members Unable to Attend

John Hanley, M.D
Robert B. Livingston, M.D.

IRB Secretary

Earling A. DeGraff

Others in attendance were

Edwin C. May, Ph.D., SAIC/Director, Cognitive Sciences Laboratory
Thomas Albert, Ph.D., SAIC/Operations Manager
Joseph Angelo Jr, Ph.D., SAIC/Division Manager
Stephen LaBerge, Ph.D., The Lucidity Institute/President
Nevin Lantz, Ph.D., Consultant Psychologist
Deborah Arthur Ph.D., Consultant Neuroscientist
Phillip Wasserman, Ph.D., SAIC/Chief Scientist
Marilyn Schlitz, Ph.D., SAIC/Research Associate
Wanda L.W. Luke, SAIC/Research Analyst
Laura Faith, SAIC/Research Associate

1. The agenda is found at Enclosure 1. The Agenda includes a review of research progress since the last meeting, by which compliance of the research with approved procedures was displayed. Agenda item [redacted] was deleted to conserve time. SG1A
2. The Board then reviewed in detail the "Protocols for the Use of Human Subjects" (Enclosure 2), prepared by staff of the Cognitive Sciences Laboratory.

3. The Board determined that the five experiments proposed in the document entitled "Protocols for use of Human Subjects", represented Minimal Risk and recommended the following changes:

(a) All Protocol Consent Forms:

(1) All protocols consent forms should include the following three paragraphs:

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form.

Similar research in other laboratories has shown that no health risks are involved in participating in this type of experiment. This field of research, however, is deemed by some to have no scientific foundation. Some friends or colleagues, therefore, may consider your participation to indicate a belief in the occult or paranormal. While, to the knowledge of the investigators, no one has suffered career damage from participating in scientific research of the type we are proposing, you should realize that your credibility with some persons might be damaged if you should chose to reveal your participation in this experiment.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

(2) Add to paragraph 5 in all consent forms: *Storage of all Records pertaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.* Including this change paragraph 5 now reads as follows:

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form. Storage of all Records pertaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.

(b) Protocol I:

(1) Delete "significantly"; reason: any variation in experimental conditions involving the human participants exceeding the limits defined in this protocol must be reviewed and approved by the IRB before being instituted.

(c) Protocol II:

(1) Delete "significant"; reason: any variation in experimental conditions involving the human participants exceeding the limits defined in this protocol must be reviewed and approved by the IRB before being instituted.

(d) Protocol III:

(1) Add the following information to the consent form.

- Description of DreamLight and how it will be used.
- Statement that there is a very remote risk of photostimulation from the DreamLight, possibly resulting in epileptic seizures.
- Statement that the medical history of the individual and family is true and complete insofar as the individual is aware of that history.
- Delete "significantly"; reason: any variation in experimental conditions involving the human participants exceeding the limits defined in this protocol must be reviewed and approved by the IRB before being instituted.

(e) Protocol IV:

(1) Changes to the protocol:

- Delete paragraph 3c, *"All subjects will be in good health as certified by Stanford University's health department."* The reason for the deletion is that pertinent health information is covered in paragraph 3f.
- Add to paragraph 3f a description of participant screening procedures, including health screening, and appending a copy of the screening instrument. Paragraph 3f now reads as follows: *"A volunteer form will be used in the initial screening of subjects in this experiment. In addition to basic biological information, the form includes a check list of medical conditions in order to determine state of health. Only people with no medical risks is judged by responses in the volunteer form will be asked to participate."*
- Delete the following: *"some subjects may experience mild discomfort during this procedure"*. The reason for deletion is this idea is covered in the preceding sentence. The paragraph now is as follows: *"The methods used to record electrodermal activity are non-invasive and do not pose any significant risk, although some minor irritation due to electrode application could possibly occur.*

(f) **Protocol V:**

- Delete word "significant"; reason: any variation in experimental conditions involving the human participants exceeding the limits defined in this protocol must be reviewed and approved by the IRB before being instituted.

4. With the above changes the Board recommended approval of all Protocols in Enclosure 2.
5. The Board asked that copies of consent forms which The Lucidity Institute has on file with Stanford University be provided to complete the file.
6. The Board was made aware of one additional protocol entitled "Effects of the Sender on Anomalous Communication in the Ganzfeld", to be conducted under subcontract at the University of Edinburgh (see Enclosure 3). A decision on this protocol was deferred until additional documentation (e.g. Consent Form) is received. A mail vote will be conducted when the file is complete.

The Board adjourned with thanks to SAIC, the Cognitive Sciences Laboratory Director, Dr. Edwin C. May and his staff for a most informative program presentation.

Garrison Rapmund, M.D.
Chairman
Institutional Review Board
Cognitive Sciences Laboratory
Science Applications International Corp.
1010 El Camino Real, Suite 330
Menlo Park, California 94025

Approval for SAIC:

Stephen D. Rockwood, Ph.D.
Sector Vice President
Advanced Technology and Analysis
Science Applications International Corp.,
1241 Cave Street
La Jolla, CA 92037

ENCLOSURE 1

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Institutional Review Board

AGENDA

22 January 1993

1230 ➧ 1300	Gathering	All
1300 ➧ 1305	Welcome and Introductions	Dr. Rapmund
1305 ➧ 1310	Review of Project Status (Administrative)	Dr. May
1310 ➧ 1420	Technical Overview of Previous Effort	Project
1420 ➧ 1440	Summary of Chinese Effort	Ms. Luke
1440 ➧ 1500	Summary of Russian Effort	Dr. May
1500 ➧ 1520	BREAK	
1520 ➧ 1700	IRB Review of Proposed Work	Project
1700 ➧ 1715	Discussion	All

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Other SAIC Offices: Albuquerque, Boston, Colorado Springs, Dayton, Huntsville, Las Vegas, Los Angeles, McLean, Oak Ridge, Orlando, San Diego, Santa Barbara, Tucson

ENCLOSURE 2

I. EEG MEASURES OF ANOMALOUS COGNITION

A. General Information

(1) **Principal investigator:**	Dr. Deborah Arthur and Dr. Stephen LaBerge
(2) **Contract in force:**	U.S. Government, Client Private.
(3) **Project title:**	EEG Measures of Anomalous Cognition.
(4) **Responsible organization:**	SAIC.
a. Performing organization:	The Lucidity Institute.
b. Relation to SAIC:	Subcontractor.
(5) **Begin date:**	1 February 1993.
(6) **Risk to human subjects:**	MINIMAL. None of the equipment used in the study or the procedures for conducting the study are experimental. The probability and magnitude of harm or discomfort anticipated in the research are not greater than those ordinarily encountered in the performance of routine physical or psychological examinations or tests.

B. Proposed Use of Human Subjects

(1) **Research–purpose, and anticipated results:** Previous work has suggested that there are changes in the electroencephalographic (EEG) activity of individuals who are responding to remote and isolated targets. Technical difficulties relating to data collection and/or analysis have hampered unequivocal replication of these results using another brain measure (magnetoencephalography). This set of experiments is designed to overcome these technical problems, as well as enhance previous efforts through an experimental design which is more comparable to standard AC experiments. The first experiment will record the event–related desynchronization (ERD) of the spontaneous EEG activity which occurs following the direct presentation of stimuli that are identical to those used in standard AC experiments. These ERDs will serve as a system calibration and will provide data for an adaptive filter to enhance the signal–detection of ERDs when stimuli are re-

mote. The second set of pilot experiments will seek to record ERDs with remote AC stimuli.

(2) **Human-use protocol:**

There are two experiments as part of this study. The first is a replication of a traditional ERD study where the stimuli are selected from our set of *National Geographic* magazine photographs. The second experiment is an attempt to observe ERDs when the same stimuli are isolated from the subject.

Each of these experiments will begin in pilot form. What is presented here is a typical approach; however, any others that may be tried will not differ from that, which is presented here.

a. Calibration of System and Subject ERD: Subjects will view *National Geographic* pictures, which are presented on a video monitor. Each subject will view approximately 30 pictures presented sequentially for one second each with an interstimulus interval of four seconds. EEG will be recorded from 15 channels over the occipital and parietal cortices referred to the right ear. EOG electrodes will be placed laterally and supraorbitally to the right eye. An average visual evoked potential beginning two seconds prior to the stimulus onset and continuing for two seconds after the stimulus onset will be collected for each stimulus presentation. Comparable unaveraged epochs will also be collected for off-line processing.

b. EEG and Anomalous Cognition: A major improvement over previous studies in this experiment is to obtain a behavioral measure of AC as well as any potential ERD indication. The main idea is to create conditions that are as favorable as possible to illicit good AC functioning, yet do not produce significant motion artifact for the collection of ERDs.

The same stimulus set that was used in experiment *a* will be used in this experiment. The rate of stimulus presentation will be randomized between five and 15 seconds. The recording procedure will be similar to the ones in experiment *a*. In pilot experiments, an optimal protocol will be determined for use in a formal experiment. In the pilot approaches, we will record ERDs: (1) during a standard AC session while a receiver is writing and drawing, and (2) using a counterbalanced random protocol to conduct a standard AC session without EEG, followed by an EEG session where only AC mental activity is used to access the same target (i.e., without writing and drawing).

(3) **Subject description:**

a. Number: 5 to 10 individuals.

b. Age range: 21 years and over.

c. State of health: All subjects will be in good health, as determined by a comprehensive medical history form completed by the subjects and reviewed by the physicians of Palo Alto Medical Foundation, in consultation with the subject's own physician, where appropriate.

d. Special qualifications: It is possible that the PI might propose to use as a subject a person having some health problem in their medical history. In this event, SAIC would ask the physicians of the Palo Alto Medical Foundation, in consultation with the subject's own physician, to rule on the participation of the subject in this research.

e. Source: All subjects will be chosen from those that have participated in previous successful AC experiments. Their backgrounds will be reviewed during the IRB formal meeting.

f. Method of selection: Self selection.

Those individuals who are in the above population will be invited to participate in this experiment, and acceptance is completely voluntary.

g. Compensation: Yes.

All subjects are consultants to SAIC and receive compensation in accordance with their individual contracts.

(4) **Description of risk to the subjects:** The methods used to record EEG activity are non–invasive and do not pose any significant risk, although some minor scalp irritation due to electrode application could possibly occur. Electrodes will be pasted to the scalp using electrode cream (e.g., EC2) which contains no calcium chloride. The skin is prepared for electrodes with a mild skin cleanser (e.g., Omni Prep) and wiped with alcohol. Some subjects may experience mild discomfort during this procedure.

(5) **Deception:** None.

(6) **Drugs or devices:** None.

(7) **Safeguards against risks:** The potential for psychological risk will be reduced by advising the subject of the potential risks involved in the experiment, and by protecting the subject's anonymity. Except for medical history, which will reside with a physician at Palo

Alto Medical Foundation, personal information will remain in SAIC custody for the duration of the project (i.e., approximately five years). If studies in this area are continued beyond this time, the data will be archived in compliance with all applicable laws and federal regulations and with federal policy for the protection of human subjects in research.

In addition, the experiment shall be conducted in full compliance with all applicable laws and federal regulations. Subjects will be provided information concerning their involvement in the experiment, and consent will be obtained in writing from each subject before research is undertaken. A subject may decline involvement at any time. Technical details of this experiment must be approved by the Scientific Oversight Committee of the Cognitive Sciences Laboratory.

(8) **Qualifications:** See attached curricula vitae.

(9) **Consent form:** See attached consent form.

S.G. Berg — 1/28/93

Signature of Principal Investigator — Date

Edwin C. May — 1/28/93

Signature of Project Director — Date

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CONSENT TO PARTICIPATE IN A PROPOSED STUDY OF
Electroencephalography Measures of Anomalous Cognition

You are invited to participate in research intended to determine whether anomalous cognition (AC), if it occurs, can cause changes in brain activity. The results of this experiment may improve our understanding of the possible mechanisms of AC.

If you accept this invitation, you will be asked to participate in two experiments which will be conducted on two different days. The first experiment will not involve AC, but rather will record brain activity that occurs in response to directly visible pictures taken from the *National Geographic* magazine and presented on a video display. The second experiment will record brain activity during an AC session.

During the first experiment, electroencephalographic (EEG) and electro-ocular (EOG) activity will be recorded while you are viewing the *National Geographic* pictures. EEG measures the electrical activity that your brain produces, and EOG measures electrical activity that your eye–movements produce. No externally produced electrical fields are applied to you. To record the EEG, 15 surface electrodes will be attached to the scalp. No hair needs to be removed for this, although your "hairstyle" may be mussed as a result. The electrodes are small in size (approximately the size of a shirt button). The electrodes will be placed over the top and back of the head, with one reference electrode placed either on the earlobe or behind the ear. The skin is prepared for electrodes by rubbing skin preparation cream on the area. This cream is a mild abrasive that removes any surface oil. Clean skin surface is important for collecting accurate data. Electrodes are attached to the skin using an electrode paste. At the end of the experiment, electrodes are removed using a cotton swab dampened with alcohol. Removal of the electrodes usually results in the hair surrounding the electrode getting a little wet, but the area is so small that rubbing with a paper towel will adequately dry the area in most instances. EOG activity is recorded in the same manner as EEG, except that two electrodes are placed, one below, and one to the side, of the eye.

After the electrodes have been placed on your head, you will be asked to sit quietly in a sound attenuating chamber where the *National Geographic* pictures will be presented. It is important that you sit very still, and minimize eye movements during the presentation of the pictures. Thirty pictures will be presented at a rate of about one every five seconds, so you will be required to sit still for a maximum of about 5 or 10 minutes at a time (allowing for unforeseen delays).

The results from the first experiment will be analyzed, at which point you will be asked to return for the second experiment. The EEG and EOG recording techniques used in this experiment will be identical to that used in the first experiment. In this experiment however, we will attempt to record brain activity while you are performing in a standard AC session. Targets will be presented remotely, on a video screen, at a random rate of presentation which will NOT BE identical to the rate of presentation that occurred in experiment 1. You will be asked to write and draw out your impressions of the target, as you normally would in a standard AC session. However, because of the sensitive nature of the EEG and EOG measurements that we will be recording, we will ask you to try to minimize movements as much as possible for no more than 30 minutes at a time.

In the event that the electrical artifacts which are produced by movement is too great for us to observe the brain activity while you are writing, we may ask you to repeat the second experiment under a modified protocol. In that case, we would have you perform a standard AC session, and follow that with a session where we attach electrodes and have you perform an AC session without writing your impressions, but only mentally recording your access to the remote target.

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form. Storage of all records purtaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.

1710 El Camino Real, Suite 330, P.O. Box 1412, Menlo Park, CA 94025 • (415) 325-8292
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Similar research in other laboratories has shown that no health risks are involved in participating in this type of experiment. This field of research, however, is deemed by some to have no scientific foundation. Some friends or colleagues, therefore, may consider your participation to indicate a belief in the occult or paranormal. While, to the knowledge of the investigators, no one has suffered career damage from participating in scientific research of the type we are proposing, you should realize that your credibility with some persons might be damaged if you should chose to reveal your participation in this experiment.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

Emergency medical care is available if the need arises during your participation in this study at the SAIC facilities in Menlo Park, California. However, no additional medical care or compensation is offered to participants in the experiment. For emergency medical assistance at the SAIC facilities in Menlo Park, California, we will call the Urgent Care Center of Palo Alto Medical Foundation at (415) 853-2959 and explain the nature of the emergency and take appropriate action.

If this explanation leaves you with unanswered questions, please ask and obtain answers satisfactory to you before signing below. If you have questions later, please call Dr. Deborah Arthur at (505) 281-1991, Dr. Stephen LaBerge at (415) 325-4297 or Dr. Edwin May at (415) 325-8292. An SAIC Institutional Review Board (IRB) composed of physicians and other knowledgeable persons has reviewed the plan of this study to ensure that you are protected to the maximum extent possible from any health risks that may be associated with your participation in this study. Additional inquiries or comments may be addressed to the IRB Chairman, Dr. Garrison Rapmund, 6 Burning Tree Court, Bethesda, MD 20817, (301) 365-1419.

Your participation in the research is voluntary. You will be free to cease participation at any time. If you decide not to participate or you later withdraw from participation, there will be no adverse consequences for you.

After receiving the information provide above and the answers to my questions, I, _____, agree to participate as a subject in the activity described. I consent to the use and publication of any data or information resulting from my participation, provided that I am not personally identified. I further understand that additional information regarding the experiment will be available to me on request and that I may withdraw my consent to participate in this experiment at any time. I am an adult and am not presently under medication or treatment by a physician, except _____.

Your signature indicates that you have read and understood the above information, that your questions have been answered to your satisfaction, and that you have decide to participate based on the information provided. A copy of this form will be furnished to you.

_____	_____
Signature of Subject	Signature of Witness
_____	_____
Signature of Principal Investigator	Date

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II. ANOMALOUS COGNITION: GENERIC PROTOCOL

Anomalous cognition (AC) is defined as a form of information transfer in which all known sensorial stimuli are absent. That is, some individuals are able to gain access, by as yet an unknown process, to information that is not available to the known sensorial channels. To understand this phenomenon, it is necessary to conduct a variety of different experiments. We frequently use a signal analogy to parse the problem into three separate researchable domains.

(1) Detector. The human subject (i.e., frequently referred to as the "receiver") acts as a detector of some AC signal. Traditional psychological/physiological variables that may be critical in our understanding of AC can be thought of as detector *efficiency*. For example, suppose that a thematic attitude test reveals that a certain individual avoids looking at a particular subscene in a photograph. It might be reasonable to expect that he or she might also avoid the same material in an AC target. This avoidance cannot be an intrinsic aspect of the target; it is only an aspect of the detector.

(2) Source. The source of an AC signal is called the target. Much of our research has focused on identifying variables that are intrinsic to the target material and not to the detector. The research question here is, "What is being sensed in an AC experiment?"

(3) Transmission. How the AC signal propagates from the source to the detector is the main question of the transmission domain. Much of our research has focused on aspects of general relativity to account various time displacements we routinely observe in the data.

The human-use aspects of AC experiments deal with limited variations. Primarily, the subject is located in the Cognitive Sciences Laboratory in Menlo Park or in an equivalent facility elsewhere or at home. The target material may be photographs, video clips from popular movies, or physical locations, which are usually located in the San Francisco Bay Area. In all of our experiments we attempt to specifically avoid emotionally troubling target material and at all times provide a non-stressful environment for the subject. In addition, we often use the same subject pool of experienced receivers.

We propose that the following protocol be approved for a class of AC experiments. Any variation would require separate approval on a case-by-case basis. For the sake of clarity, the following protocol will assume that the target material is a set of *National Geographic* magazine photographs and that the subject is located in the Cognitive Sciences Laboratory.

A. General Information

(1) **Principal investigator:**	Designated by Edwin C. May, Ph.D.
(2) **Contract in force:**	U.S. Government, Client Private.
(3) **Project title:**	Phenomenological Research and Analysis.
(4) **Responsible organization:**	SAIC.
(5) **Begin date:**	1 February 1993.

(6) **Risk to human subjects:** MINIMAL.

Subjects write and draw their mental impressions of randomly chosen target material. This process requires no more mental effort than does authoring technical material in a relaxed environment.

B. Proposed Use of Human Subjects

(1) **Research—purpose, and anticipated results:** Previous research has suggested that some form of anomalous cognition (AC) can be detected in the laboratory. This class of experiments will examine the nature of either the detector, the source, or the transmission of AC. We expect to observe effect sizes that indicate a moderate behavioral phenomenon (i.e., effect sizes of approximately 0.4).

(2) **Human-use protocol:**

The general strategy of this class of experiment is to sensorially and physically isolate a randomly selected visual target from a subject and ask him or her to describe that material as accurately as possible.

Subject Selection

During the past 20 years, we have identified a small group of individuals who have repeatedly demonstrated significant statistical evidence of AC under laboratory conditions. All subjects who volunteer for this experiment will be from that population.

Target Selection

A target for a trial will be randomly selected from approximately 100 *National Geographic* magazine photographs, which have been chosen on the basis of their general visual impact, consistence of scale, and relative emotional neutrality. That is, none of the target material has been designed to "trick" or shock the subject in any way. In addition, these 100 photographs have been grouped into 20 packs of 5 targets each. These groups were constructed so that the targets within the group are as different from one another as possible.

Single Trial Protocol

The following is a step-by-step description of a single AC trial. This trial is assumed to begin at 10:00 hours. The subject is called a *receiver* and a person who interviews the receiver is called a monitor.

(1) At 1000 hours a receiver and a monitor are sequestered in the laboratory. Within this laboratory are only a desk, a lamp, a clock, and two chairs. Although the lighting is subdued, the receiver and monitor are alert and no special meditative or altered state is used.

(2) At 1005 hours, an assistant randomly selects one photograph from the set of *National Geographic* magazine pictures. Neither the receiver nor the monitor, who remain in the laboratory, are privy to this choice.

(3) From 1005 to 1020, hours (i.e., approximately 15 minutes) the monitor asks the receiver to write and draw his or her impressions with regard to the selected photograph. The questioning is relaxed and care is taken not to "lead" the receiver. Therefore, most questions are meant to clarify aspects of the subject's response.

(4) At 1020 hours, the monitor leaves the laboratory and copies the written and drawn material; provides the original to an experiment coordinator; and returns to the laboratory with a copy of the intended photograph and the copy of the receiver's response.

(5) At 1025 hours, the monitor and the receiver discuss the quality of the correspondence between the target material and the response. Positive aspects are emphasized and all questions about the session are answered.

(6) At 1030 hours, the trial ends.

Analysis

An analyst, who is blind to the target choice, is presented with all the photographs in the pack from which the target was chosen. That pack includes the intended target and four others that are as different from one another as possible. The analyst's task is to rank-order the targets from the one that best matches the response to the one that least matches the response. This ranking is forced regardless of the quality of any of the matches.

An experiment coordinator records the rank number of the actual target (i.e., a number between one and five). After a number of such trials, the sum-of-rank numbers is computed and compared to the known statistical distribution for assessment.

(3) **Subject description:**

a. Number:	8 to 10 individuals.
b. Age range:	21 years and over.
c. State of health:	All subjects will be in good health, as determined by a comprehensive medical history form completed by the subjects and reviewed by the physicians of Palo Alto Medical Foundation, in consultation with the subject's own physician, where appropriate.
d. Special qualifications:	It is possible that the PI might propose to use as a subject a person having some health problem in their medical history. In this event, SAIC would ask the physicians of the Palo Alto Medical Foundation, in consultation with the subject's own physician, to rule on the participation of the subject in this research.
e. Source:	All subjects will be chosen from those that have participated in previous successful AC experiments, or have reported success in lucid dreaming to the Lucidity Institute. Their backgrounds will be reviewed during the IRB formal meeting.
f. Method of selection:	Self selection.

Those individuals who are in the above populations will be invited to participate in this experiment, and acceptance is completely voluntary.

g. Compensation:

Yes.

Those subjects who are consultants to SAIC will receive compensation in accordance with their individual contracts. Those subjects who are from the lucid dreaming population will be uncompensated volunteers.

(4) **Description of risk to the subjects:**

The methods used to conduct trials in this experiment do not expose subjects to procedures any more risky than the environment of a school examination. However, two possible psychological risks should be noted. One risk stems from the opinion held by many scientists and laypersons that participation in studies of AC indicates a belief in the occult and supernatural. Subjects in this study, if they voluntarily disclose their participation, have a small chance of losing the respect of colleagues who believe that these studies have no scientific merit. Another risk is the possibility that some persons may come to believe that they have skills which, in fact, they do not possess.

(5) **Deception:**

None.

(6) **Drugs or devices:**

None.

(7) **Safeguards against risks:**

The potential for psychological risk will be reduced by advising the subject of the potential risks involved in the experiment, and by protecting the subject's anonymity. Except for medical history, which will reside with a physician at Palo Alto Medical Foundation, personal information will remain in SAIC custody for the duration of the project (i.e., approximately five years). If studies in this area are continued beyond this time, the data will be archived in compliance with all applicable laws and federal regulations with federal policy for the protection of human subjects in research.

In addition, the experiment shall be conducted in full compliance with all applicable laws and federal regulations. Subjects will be provided information concerning their involvement in the experiment, and consent will be obtained in writing from each subject before research is undertaken. A subject may decline involvement at any time. Technical details of this experiment must

be approved by the Scientific Oversight Committee of the Cognitive Sciences Laboratory.

(8) **Deception:** None.

(9) **Drugs or devices:** None.

(10) **Qualifications:** See attached curricula vitae.

(11) **Consent form:** See attached consent form.

Edwin C. May — 1/28/93

Signature of Principal Investigator — Date

Edwin C. May — 1/28/93

Signature of Project Director — Date

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CONSENT TO PARTICIPATE IN A PROPOSED STUDY OF
Anomalous Cognition

You are invited to participate in the research of anomalous cognition (AC), if it occurs. The results of this experiment may improve our understanding about the possible mechanisms of AC.

If you accept this invitation, you will be asked to participate in up to forty, 15-minute AC sessions in our laboratory in Menlo Park, California. You and the principal investigator (PI) will determine the exact schedule, but typically you will do one or two sessions each day of the experiment, which will be conduced a week at a time.

The target material will be selected randomly from a set of 100 photographs of outdoor scenes. Neither you nor the PI will know the specific target. During the session, a monitor, who is also blind to the target choice, will ask you to describe you impressions of the target material. He or she may also ask you to clarify aspects of your response.

At the end of each session, the monitor will copy your response and show you the intended target. During this feedback period, you are encouraged to discuss your impressions of the session with the monitor.

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form. Storage of all records purtaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.

Similar research in other laboratories has shown that no health risks are involved in participating in this type of experiment. This field of research, however, is deemed by some to have no scientific foundation. Some friends or colleagues, therefore, may consider your participation to indicate a belief in the occult or paranormal. While, to the knowledge of the investigators, no one has suffered career damage from participating in scientific research of the type we are proposing, you should realize that your credibility with some persons might be damaged if you should chose to reveal your participation in this experiment.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

Emergency medical care is available if the need arises during your participation in this study at the SAIC facilities in Menlo Park, California. However, no additional medical care or compensation is offered to participants in the experiment. For emergency medical assistance at the SAIC facilities in Menlo Park, California, we will call the Urgent Care Center of Palo Alto Medical Foundation at (415) 853-2959 and explain the nature of the emergency and take appropriate action.

If this explanation leaves you with any unanswered questions, please ask and obtain answers satisfactory to you before signing below. If you have questions later, please call Dr. Edwin C. May at (415) 325-8292. An SAIC Institutional Review Board (IRB) composed of physicians and other knowledgeable persons has reviewed the plan of this study to ensure that you are protected to the maximum extent possible from any health risks that may be associated with your participation in this study. Additional inquiries or comments may be addressed to the IRB Chairman, Dr. Garrison Rapmund, 6 Burning Tree Court, Bethesda, MD 20817, (301) 365-1419.

Suite 388, P.O. Box 1418, Menlo Park, CA 94025 • (415) 325-8292
Other SAIC Offices: Albuquerque, Boston, Colorado Springs, Dayton, Huntsville, Las Vegas, Los Angeles, Midland, San Diego, Tampa, Tucson, Washington, D.C.

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Your participation in the research is voluntary. You will be free to cease participation at any time. If you decide not to participate or you later withdraw from participation, there will be no adverse consequences for you.

After receiving the information provide above and the answers to my questions, I, _____, agree to participate as a subject in the activity described. I consent to the use and publication of any data or information resulting from my participation, provided that I am not personally identified. I further understand that additional information regarding the experiment will be available to me on request and that I may withdraw my consent to participate in this experiment at any time. I am an adult and am not presently under medication or treatment by a physician, except _____.

Your signature indicates that you have read and understood the above information, that your questions have been answered to your satisfaction, and that you have decide to participate based on the information provided. A copy of this form will be furnished to you.

_____	_____
Signature of Subject	Signature of Witness
_____	_____
Signature of Principal Investigator	Date

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Other SAIC Offices: Albuquerque, Boston, Colorado Springs, Dayton, Huntsville, Las Vegas, Los Angeles, Orlando, Tampa, Washington, D.C.

III. LUCID DREAMING AND AC

A. General Information

(1) **Principal investigator:** Stephen LaBerge, Ph.D.

(2) **Contract in force:** U.S. Government, Client Private.

(3) **Project title:** Phenomenological Research and Analysis.

(4) **Responsible organization:** SAIC.

a. Performing organization: The Lucidity Institute.

b. Relation to SAIC: Subcontractor.

(5) **Beginning date:** 1 February 1993.

(6) **Risk to human subjects:** MINIMAL

Risks due to dream experiences are no different than those experienced every night. Subjects may be exposed to flashing lights during sleep, but these will present risks no more serious than occasional loss of sleep. There is risk of minor discomfort associated with EEG electrode application.

B. Proposed Use of Human Subjects

(1) **Research--purpose, and anticipated results:** Under an earlier contract, the Lucidity Institute performed a pilot experiment to explore the potential for using the REM lucid dreaming state (i.e., dreaming while knowing that one is dreaming) for anomalous cognition (AC). While the results of that effort were encouraging, the difficulties that were encountered in unmonitored sleep made it difficult to collect a sufficient number of trials for conclusive results. Thus, the study will be continued under laboratory conditions.

We anticipate that under laboratory conditions, the dream recall will be enhanced and the frequency of lucid dreams increased. Thus, we will be able to provide a more robust assessment of whether lucid dreaming improves the quality of AC.

(2) **Human-use protocol:**

In this study, we build upon the results of the previous lucid dreaming investigation. In that study, we found significant evidence of anomalous cognition; however, we were unable to evaluate if the dream state improved AC over baseline, because of the lack of sufficient numbers of trials. In addi-

tion, subjects remarked that they were not particularly motivated for lucidity in the home setting. In this new experiment, all the trials will occur in the laboratory where traditional methods will be employed to monitor the sleep of the subject and to determine when the subjects become lucid.

Previous work in AC research has indicated that responses to subliminally presented target material are similar to those obtained with AC stimuli. We propose to incorporate subliminally presented targets in addition to AC targets for the purpose of comparison of the dream responses.

Stimuli

The stimuli for AC and subliminal trials will be randomly selected photographs, which will be drawn from the same set of *National Geographic* magazine pictures. In AC trails, the photograph will be located in a sealed box, which will be located in a room near the experimental bedchamber, and will be available throughout the night. In subliminal trials, the randomly selected photograph will be shown to the subject for a duration below the subject's threshold of conscious perception and the sealed box will be empty.

In pseudo-subliminal trials, random visual noise will be presented in place of the photographs. Both subliminal and pseudo-subliminal slide stimuli will be preceded and followed by a random visual noise slide (i.e., visual masking). Pre-sleep stimuli will be presented with a computer, which is programmed to randomly select trial type in a counter-balanced order. The subject will be seated in front of the computer monitor upon which the experimenter presents either the subliminal pre-sleep stimulus or the pseudo-subliminal pre-sleep stimulus. Both the experimenter and subject are blind to the condition.

Sleep Protocol

Regardless of the type of stimuli, the sleep protocol is identical. Specifically:

- The subject is briefed about the experiment and prepares for the session (i.e. puts on night-clothes, etc.)
- The experimenter shows the subject the location of the sealed box, which contains either the remote stimulus photograph (i.e., AC trials) or is empty (i.e., subliminal trial).
- The EEG of the subject will be monitored during sleep using the standard 10-20 electrode placement system. Grass brand gold-plated electrodes will be glued to the scalp with collodion to ensure an artifact-free recording. Beckman brand silver, silver chloride electrodes will be used to collect data on eye movements and submental EMG, for determining the presence of REM sleep and the occurrence of volitional eye movement signals marking the onset of lucid dreaming. The electrodes are applied to the subject's face and scalp and secured in place with either collodion (for scalp) or surgical tape (for face).
- The subject lies down, connects the electrodes to the polygraph inputs, and practices giving the eye movement signals for marking the onset of lucidity and the initiation and completion of the trial. The subject relaxes in bed in preparation for sleep. The door to the bedchamber is closed and the subject goes to sleep. The experimenter remains by the polygraph to monitor the equipment and watch for eye-movement signals indicating the onset of lucid dreaming.
- Should the subject become aware of dreaming (become lucid), he or she will give an eye-movement signal composed of 4 full fast sweeps of the eyes left, right, left, right (LR4). The subject will then attempt to visit, open, and view the contents of the sealed box containing the remote stimulus. If the subject succeeds in viewing the box's contents, he or she will give an eye movement signal composed of three sets of left–right eye movements (LR6). The subject will continue to signal left–right–left–right every minute as long as he or she is lucid. The experimenter will awaken the subject if (1) the subject gives the LR6 signal or (2) the subject fails to give an LR4 signal for more than 2 minutes following a lucidity signal. (This is done so that the subject does

not forget the content of the lucid dream.) The subject will make a verbal, full dream report immediately following any awakening from a lucid dream.

- At the end of the night, which is determined by the completion of a REM period or subject's inability to sleep longer, the experimenter will remove the subject's electrodes and place the tape of any dream reports in an envelope marked with the subject's name and the date of the recording. The experimenter will not discuss the subject's dreams with the subject.

This protocol will be repeated over time until each subject contributes 4 successful lucid dream trials in each of the two conditions (i.e., subliminal and AC).

(3) **Subject description:**

a. Number:	6 to 8 individuals.
b. Age range:	Between 18 and 60.
c. State of health:	All subjects will be in good health, as determined by a comprehensive medical history form completed by the subjects and reviewed by the physicians of Palo Alto Medical Center.
d. Special qualifications:	It is possible that the PI might propose to use as a subject a person having some health problem in their medical history. In this unlikely event, SAIC would ask the physicians of the Palo Alto Medical Foundation, in consultation with the subject's own physician, to rule on the participation of the subject in this research.
e. Source:	All subjects will be chosen from those that have participated in previous successful AC experiments or are staff members of the Lucidity Institute. Their backgrounds will be reviewed during the IRB formal meeting.
f. Method of selection:	Self selection. Those individuals who are in the above population will be invited to participate in this experiment, and acceptance is completely voluntary.
g. Compensation:	Yes. All subjects are consultants to SAIC or employees of the Lucidity Institute and receive compensation in accordance with their individual contracts.
(4) **Description of risk to the subjects:**	The methods used to record EEG activity are non–invasive and do not pose any significant risk, although some minor scalp irritation due to electrode application could possibly occur. Electrodes will be pasted to the scalp using electrode cream (e.g., EC2) which contains no calcium chloride. The skin is prepared for electrodes with a mild skin cleanser (e.g., Omni Prep) and wiped with alcohol. Some subjects may experience mild discomfort during this procedure. However, two possible psychological risks should be noted.

One risk stems from the opinion held by many scientists and laypersons that participation in studies of the paranormal indicates a belief in the occult and supernatural. Subjects in this study, if they voluntarily disclose their participation, have a small chance of losing the respect of colleagues who believe that these studies have no scientific merit. Another risk is the possibility that some persons may come to believe that they have skills which, in fact, they do not possess. It is possible that some subjects may suffer some loss of restful sleep during the trial.

(5) **Deception:** None.

(6) **Drugs or devices:** None.

(7) **Safeguards against risks:** The potential for psychological risk will be reduced by advising the subject of the potential risks involved in the experiment, and by protecting the subject's anonymity. Except for medical history, which will reside with a physician at Palo Alto Medical Foundation, personal information will remain in SAIC custody for the duration of the project (i.e., approximately five years). If studies in this area are continued beyond this time, the data will be archived in compliance with all applicable laws and federal regulations with federal policy for the protection of human subjects in research.

In addition, the experiment shall be conducted in full compliance with all applicable laws and federal regulations. Subjects will be provided information concerning their involvement in the experiment, and consent will be obtained in writing from each subject before research is undertaken. A subject may decline involvement at any time. Technical details of this experiment must be approved by the Scientific Oversight Committee of the Cognitive Sciences Laboratory.

(8) **Qualifications of principal investigator:** See attached curricula vitae.

(9) **Consent form:** See attached consent form.

Signature of Principal Investigator — Date: 1/28/93

Signature of Project Director — Date: 1/28/93

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CONSENT TO PARTICIPATE IN A PROPOSED STUDY OF
Lucid Dreaming and Anomalous Cognition

You are invited to participate in research on anomalous cognition (AC) and lucid dreaming intended to determine whether AC can be improved in a lucid dream. To assist in our understanding of the process, some trials will not be AC but will include a subliminal presentation of target material prior to sleep, so that we can compare the dream recall in each of the conditions. If you accept this invitation, you will be asked to sleep in the laboratory for one or more nights while your brain waves and other physiological measures are monitored on a polygraph. You will be asked to signal your awareness of the dream state with an agreed upon pattern of eye-movements, which will be monitored by our recording equipment. We will ask you to carry out certain actions in the dream, and to report verbally your experience upon awakening.

You may be given a sensory stimulus during the night to cue you that you are dreaming. This stimulus may be a light, a sound, a voice, a vibration or other non-painful tactile stimulus, or an odor. You may also be asked to wear a comfortable mask in which are mounted several small lights that will be turned on when you are in REM (dreaming) sleep. In the day before the night recording, you may be asked to follow a procedure designed to prepare you mentally to recognize the stimulus as a cue to realize that you are dreaming.

In order to record your brain waves (EEG), eye-movements (EOG), and chin muscle activity (EMG) we will apply at least two electrodes to your scalp with collodion glue (dried with an air brush), and about eight electrodes to your face with tape. The skin will be prepared with acetone or alcohol and slightly abrasive electrode jelly. We may also record your respiration with a small device taped under your nose, and your finger pulse with a unit taped to one of your thumbs. In the morning following the experiment, the electrodes will be removed and your skin and hair cleaned with alcohol or acetone.

Before bed you will be seated in front of a computer monitor which will display very briefly a (subliminal) stimulus which will either consist of the target picture or a random noise pattern. You will be shown a box outside the door of the room in which you will be sleeping, which may contain a copy of the target photograph. Approximately one half of the time, and randomly determined, the box will be empty. You will then lie down, and practice giving the eye-movement signals for marking the onset of lucidity and the initiation and completion of the target viewing task.

Your task, should you choose to accept it, will be to become aware of dreaming (become lucid), then give an eye -movement signal composed of 4 full fast sweeps of the eyes left, right, left, right (LR4). Then you will attempt to visit, open and view the contents of the sealed box containing the target photograph. If you succeed in viewing the box's contents, you will give an eye movement signal composed of three sets of left-right eye movements (LR6). If the box appears empty, you should attempt to recall your pre-sleep stimulus. In either case, you should give the LR6 signal. You will continue to signal left-right-left-right every one minute as long as you are lucid. The experimenter will awaken you if (1) you give the LR6 signal or (2) you fail to give a LR4 signal for more than 2 minutes following a lucidity signal (so that you do not forget the content of the lucid dream). You will be asked to make a verbal, full dream report immediately following any awakening from a lucid dream.

At the end of the session, determined by the completion of a REM period or your inability to sleep longer, the experimenter will remove your electrodes.

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form. Storage of all records purtaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.

Similar research in other laboratories has shown that no health risks are involved in participating in this type of experiment. This field of research, however, is deemed by some to have no scientific foundation. Some friends or colleagues, therefore, may consider your participation to indicate a belief in the occult or paranormal. While, to the knowledge of the investigators, no one has suffered career damage from participating in scientific research of the type we are proposing, you should realize that your credibility with some persons might be damaged if you should chose to reveal your participation in this experiment.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

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You may be given a sensory stimulus during the night to cue you that you are dreaming. This stimulus may be a light, a sound, a voice, a vibration or other non–painful tactile stimulus, or an odor. You may also be asked to wear a comfortable mask in which are mounted several small sights (Dreamlight) that will be turned on when you are in REM (dreaming) sleep. In the day before the night recording you may be asked to follow a procedure designed to prepare you mentally to recognize the stimulus as cue to realize that you are dreaming.

Minor and temporary discomfort may result from the light abrasion necessary for proper electrode placement. Your sleep may be slightly disrupted due to the light stimuli. If you have ever had an epileptic seizure, or have a family history of epilepsy, you must inform the experimenters, in which case you will not receive any light stimuli. The Medical History of myself and family is true and complete insofar as I am aware of that history.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

Emergency medical care is available if the need arises during your participation in this study at the SAIC facilities in Menlo Park, California. However, no additional medical care or compensation is offered to participants in the experiment. For emergency medical assistance at the SAIC facilities in Menlo Park, California, we will call the Urgent Care Center of Palo Alto Medical Foundation at (415) 853-2959 and explain the nature of the emergency and take appropriate action.

If this explanation leaves you with any unanswered questions, please ask and obtain answers satisfactory to you before signing below. If you have questions later, please call Dr. Stephen LaBerge at (415) 325-4297 or Dr. Edwin C. May at (415) 325-8292. An SAIC Institutional Review Board (IRB) composed of physicians and other knowledgeable persons has reviewed the plan of this study to ensure that you are protected to the maximum extent possible from any health risks that may be associated with your participation in this study. Additional inquiries or comments may be addressed to the IRB Chairman, Dr. Garrison Rapmund, 6 Burning Tree Court, Bethesda, MD 20817, (301) 365-1419.

Your participation in the research is voluntary. You will be free to cease participation at any time. If you decide not to participate or you later withdraw from participation, there will be no adverse consequences for you.

After receiving the information provide above and the answers to my questions, I, _____, agree to participate as a subject in the activity described. I consent to the use and publication of any data or information resulting from my participation, provided that I am not personally identified. I further understand that additional information regarding the experiment will be available to me on request and that I may withdraw my consent to participate in this experiment at any time. I am an adult and am not presently under medication or treatment by a physician, except

_____.

Your signature indicates that you have read and understood the above information, that your questions have been answered to your satisfaction, and that you have decide to participate based on the information provided. A copy of this form will be furnished to you.

I have read the above statement and am consenting to participate in the experiment of my own volition. Further, I certify that I have never had an epileptic seizure, not do I have a family history of epilepsy,

_____ _____

Signature of Subject Signature of Witness

_____ _____

Signature of Principal Investigator Date

IV. PHYSIOLOGICAL EFFECTS OF REMOTE OBSERVATION

A considerable body of research published in the parapsychology literature indicates that it may be possible either to sense variations in or to "influence" the electrodermal responses (EDR) of shielded individuals. More recent studies have shown that ERDs occur as a result of intense observation by an isolated agent. In these studies, the general protocol is as follows. A relaxed subject sits quietly in a shielded environment while his or her electrodermal activity is being monitored. In addition, the subject is being continuously monitored with a video camera.

An agent, who is isolated from the subject, may or may not, on a random basis, observe the video image of the subject. Significant differences of the EDRs between these conditions have been observed in a variety of different protocols. Since most of these latter investigations have been carried out in one laboratory, it is important to replicate the experiment under our own conditions.

A. General Information

(1) **Principal investigator:**	Dr. Marilyn Schlitz and Dr. Stephen LaBerge
(2) **Contract in force:**	U.S. Government, Client Private.
(3) **Project title:**	Physiological effects of remote observation.
(4) **Responsible organization:**	SAIC.
a. Performing organization:	The Lucidity Institute.
b. Relation to SAIC:	Subcontractor.
(5) **Begin date:**	1 February 1993.
(6) **Risk to human subjects:**	MINIMAL. None of the equipment used in the study or the procedures for conducting the study are experimental. The probability and magnitude of harm or discomfort anticipated in the research are not greater than those ordinarily encountered in the performance of routine physical or psychological examinations or tests.

B. Proposed Use of Human Subjects

(1) **Research—purpose, and anticipated results:**	Previous work has suggested that there are changes in the electrodermal activity of individuals who appear to be responding to the observation by a remote and isolated agent. The effect sizes that have been reported vary between 0.3 and 0.5.

How this relatively robust effect is manifested is currently unknown.

In this study, we will replicate and extend the earlier work first to verify the existence of an effect and then to identify if the effect is correlational or causal (i.e., the agent "causes" the change in the electrodermal activity of the subject).

(2) **Human-use protocol:**

In pilot fashion, we will explore a variety of different approaches; however, the human-use portion of the protocol will not vary significantly from what is present here.

At the beginning of a trial, the subject will be seated in a comfortable position and a standard electrode (e.g., silver/silver chloride palmer electrode, which is approximately 7.0 mm in diameter) will be attached to his or her left palm. Standard, optically isolated electronics will amplify the signal for graphical recording and computer acquisition.

A session will last approximately 15-20 minutes and consists of twenty, 30-second trials. On a random, counter-balanced protocol, an agent, who is known to the subject, will either intensely observe the video monitor or relax with his or her back to the video monitor. Thus, the only independent variable in this experiment is the rotational position of the agent's chair.

The subject's task during this period will be to sit quietly and relax. It is possible that for some exploratory work, the subject might be asked to read or otherwise occupy his or her internal attention.

(3) **Subject description:**

a. Number: 30 to 50 individuals.

b. Age range: 18 years and over.

c. State of health: All subjects will be in good health.

d. Special qualifications: None.

e. Source: All subjects will be volunteers from the San Fran cisco Bay Area.

f. Method of selection: A volunteer form will be used in the initial screening of subjects in this experiment. In addition to basic biological information, the form includes a check list of medical conditions in order to determine state of health. Only people with no medical risks will be asked to participate.

Those individuals who respond to a campus advertisement will be invited to participate in this experiment, and acceptance is completely voluntary. Each subject will contribute only one trial.

g. Compensation: Yes.

Each subject will be compensated on an hourly basis in accordance with Stanford University's standard practice.

(4) **Description of risk to the subjects:** The methods used to record electrodermal activity are non-invasive and do not pose any significant risk, although some minor irritation due to electrode application could possibly occur.

(5) **Deception:** None.

(6) **Drugs or devices:** None.

(7) **Safeguards against risks:** The potential for psychological risk will be reduced by advising the subject of the potential risks involved in the experiment, and by protecting the subject's anonymity.

In addition, the experiment shall be conducted in full compliance with all applicable laws and federal regulations. Subjects will be provided information concerning their involvement in the experiment, and consent will be obtained in writing from each subject before research is undertaken. A subject may decline involvement at any time. Technical details of this experiment must be approved by the Scientific Oversight Committee of the Cognitive Sciences Laboratory.

(8) **Qualifications:** See attached curricula vitae.

(9) **Consent form:** See attached consent form.

Signature of Principal Investigator — Date: 1/28/93

Signature of Project Director — Date: 1/28/93

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CONSENT TO PARTICIPATE IN A PROPOSED STUDY OF
Physiological Effects of Remote Observation

You are invited to participate in research intended to determine the degree to which your skin parameters can demonstrate that you are being observed by closed-circuit television.

If you accept this invitation, you will be asked to participate in one experimental session, which will last approximately one hour. You will be asked to sit comfortably and relax alone in a pleasant room. It is possible that you may be asked to read or to perform some other simple mental task. We will attach an electrode to your left hand that will monitor your electrodermal activity. That is, the electrical properties of your skin. In addition, you will be continuously monitored with a video camera that will display your image on a remote TV monitor.

An individual, whom you will meet before the session begins, will observe that monitor for periods lasting 30 seconds each. During other 30 second periods that individual will have his or her back to the monitor and will not be able to see you. Whether that individual is looking at you or not will be determined in advance using a random procedure. When the session is over, you will be shown the result and how your contribution fits into the larger study.

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form. Storage of all records purtaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.

Similar research in other laboratories has shown that no health risks are involved in participating in this type of experiment. This field of research, however, is deemed by some to have no scientific foundation. Some friends or colleagues, therefore, may consider your participation to indicate a belief in the occult or paranormal. While, to the knowledge of the investigators, no one has suffered career damage from participating in scientific research of the type we are proposing, you should realize that your credibility with some persons might be damaged if you should chose to reveal your participation in this experiment.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

Emergency medical care is available if the need arises during your participation in this study. However, no additional medical care or compensation is offered to participants in the experiment. For emergency medical assistance, we will call the Urgent Care Center of Palo Alto Medical Foundation at (415) 853-2959 and explain the nature of the emergency and take appropriate action.

If this explanation leaves you with unanswered questions, please ask and obtain answers satisfactory to you before signing below. If you have questions later, please call Dr. Marilyn Schlitz at (415) 325-8292 or Dr. Stephen LaBerge at (415) 325-4297. An Institutional Review Board (IRB) composed of physicians and other knowledgeable persons has reviewed the plan of this study to ensure that you are protected to the maximum extent possible from any health risks that may be associated with your participation in this study.

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Your participation in the research is voluntary. You will be free to cease participation at any time. If you decide not to participate or you later withdraw from participation, there will be no adverse consequences for you.

After receiving the information provide above and the answers to my questions, I, _____, agree to participate as a subject in the activity described. I consent to the use and publication of any data or information resulting from my participation, provided that I am not personally identified. I further understand that additional information regarding the experiment will be available to me on request and that I may withdraw my consent to participate in this experiment at any time. I am an adult and am not presently under medication or treatment by a physician, except _____.

Your signature indicates that you have read and understood the above information, that your questions have been answered to your satisfaction, and that you have decide to participate based on the information provided. A copy of this form will be furnished to you.

_____ _____
Signature of Subject Signature of Witness

_____ _____
Signature of Principal Investigator Date

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Other SAIC Offices: Albuquerque, Boston, Colorado Springs, Huntsville, La Jolla, Los Angeles, Mid-Atlantic, Oak Ridge, Orlando, Palo Alto, Seattle, Tucson

V. ANOMALOUS PERTURBATION: GENERIC PROTOCOL

Anomalous perturbation (AP) is defined as the perturbation of matter in which all known physical interactions are absent. This class of phenomena are far less established as are those associated with anomalous cognition.

The human-use aspects of AP experiments deal with limited variations. Primarily, the subject is located within a few meters of some sensitive instrumentation or biological system such a cell culture. His or her task is to attempt to influence the target system. The results of that mental effort are usually displayed in the form of some kind of sensory feedback (e.g., a tone or light display which is proportional to the device output). Frequently, a biofeedback model, which uses "passive" attention, is used to instruct the subject about the task. The subject is asked to do mentally whatever is required to affect a directed change in the feedback display. The target systems are benign and do not represent a threat to the subject.

We propose that the following protocol, which represents AP experiments that are consistent with this general description, be approved for the general class of AP experiments. Any variation would require separate approval on a case-by-case basis. For the sake of clarity, the following protocol will assume that the target system is a sensitive electronic device and that the subject and the device are located in the Cognitive Sciences Laboratory.

A. General Information

(1) **Principal investigator:**	Designated by Edwin C. May, Ph.D.
(2) **Contract in force:**	U.S. Government, Client Private.
(3) **Project title:**	Phenomenological Research and Analysis.
(4) **Responsible organization:**	SAIC.
(5) **Begin date:**	1 February 1993.
(6) **Risk to human subjects:**	MINIMAL. Subjects relax and attempt to passively modify the feedback display. There is usually less activity associated with this task than there is associated with watching one's favorite sports team compete.

B. Proposed Use of Human Subjects

(1) **Research—purpose, and anticipated results:** Previous research has suggested that some form of anomalous perturbation (AP) can be detected in the laboratory. The problem with much of this research is that either the physical

environment is not sufficiently controlled or that some form of anomalous cognition is adequate to explain the results. In this experiment, a sensitive electronic device, which will be shown to be independent of environmental fluctuations, will be used as an AP target system. The protocol will be such to specifically examine a possible AC mechanism as well as a putative AP mechanism.

(2) **Human-use protocol:**

The general strategy of this experiment is to physically isolate a subject from a sensitive electronic device and ask him or her to modify the device's output.

Subject Selection

Currently, we do not know who is a "good" AP subject; however, during the past 20 years, we have identified a small group of individuals who have repeatedly demonstrated significant evidence of AC under laboratory conditions. All subjects who volunteer for this experiment will be from that population.

Session Protocol

An experimenter randomly determines effort and control periods each of which last no more than 10 minutes. During effort periods, the subject is instructed to passively attend to the feedback display and mentally attempt to modify it. Occasionally, the subject is instructed to "directly" interact with the device by mentally "merging" with it. During the control periods, the subject is instruct to relax and clear his or her mind of anything concerning the experiment.

Analysis

If the output of the device appears to be within one or two sigma of its usual behavior, yet the deviations appear to be consistent in direction, than an AC explanation is likely. If, however, the device is significantly modified to the point of failure, then a more vigorous level of engineering controls are suggested for a further experiment.

If a beyond-chance, statistical deviation is observed, then traditional statistical methods will be employed to determine effect sizes and probabilities.

(3) **Subject description:**

a. Number: 5 to 8 individuals.

b. Age range: 21 years and over.

c. State of health: All subjects will be in good health, as determined by a comprehensive medical history form completed by the subjects and reviewed by the physicians of Palo Alto Medical Foundation, in consultation with the subject's own physician, where appropriate.

d. Special qualifications: It is possible that the PI might propose to use as a subject a person having some health problem in their medical history. In this unlikely event,

SAIC would ask the physicians of the Palo Alto Medical Foundation, in consultation with the subject's own physician, to rule on the participation of the subject in this research.

e. Source:

All subjects will be chosen from those that have participated in previous successful AC experiments, or have reported success in lucid dreaming to the Lucidity Institute. Their backgrounds will be reviewed during the IRB formal meeting.

f. Method of selection:

Self selection.

Those individuals who are in the above populations will be invited to participate in this experiment, and acceptance is completely voluntary.

g. Compensation:

Yes.

Those subjects who are consultants to SAIC will receive compensation in accordance with their individual contracts. Those subjects who are from the lucid dreaming population will be uncompensated volunteers.

(4) **Description of risk to the subjects:**

The methods used to conduct trials in this experiment do not expose subjects to procedures any more risky than watching the Super Bowl. However, two possible psychological risks should be noted. One risk stems from the opinion held by many scientists and laypersons that participation in such studies indicates a belief in the occult and supernatural. Subjects in this study, if they voluntarily disclose their participation, have a small chance of losing the respect of colleagues who believe that these studies have no scientific merit. Another risk is the possibility that some persons may come to believe that they have skills which, in fact, they do not possess.

(5) **Deception:**

None.

(6) **Drugs or devices:**

None.

(7) **Safeguards against risks:**

The potential for psychological risk will be reduced by advising the subject of the potential risks involved in the experiment, and by protecting the subject's anonymity. Except for medical history, which will reside with a physician at Palo Alto Medical Foundation, personal information will remain in SAIC custody for the duration of the project (i.e., approximately five years). If studies in this area are continued beyond this time, the data will be archived in compliance with all applicable laws and federal regulations federal

policy for the protection of human subjects in research.

In addition, the experiment shall be conducted in full compliance with all applicable laws and federal regulations. Subjects will be provided with information concerning their involvement in the experiment, and consent will be obtained in writing from each subject before research is undertaken. A subject may decline involvement at any time. Technical details of this experiment must be approved by the Scientific Oversight Committee of the Cognitive Sciences Laboratory.

(8) **Deception:** None.

(9) **Drugs or devices:** None.

(10) **Qualifications:** See attached curricula vitae.

(11) **Consent form:** See attached consent form.

Edwin C. May — Signature of Principal Investigator — 1/28/93 — Date

Edwin C. May — Signature of Project Director — 1/28/93 — Date

Science Applications International Corporation
An Employee-Owned Company

CONSENT TO PARTICIPATE IN A PROPOSED STUDY OF
Anomalous Perturbation

You are invited to participate in the research of anomalous perturbation (AP), if it occurs. The results of this experiment may improve our understanding about the possible mechanisms of AP.

If you accept this invitation, you will be asked to participate in approximately forty, 30-minute AC sessions either in our laboratory in Menlo Park, California or in some other equivalent laboratory in the USA. You and the principal investigator (PI) will determine the exact schedule, but typically you will do one to four sessions each day of the experiment, which will be conduced at a week at a time.

The target will be a sensitive electronic device. During a session a monitor will randomly determine effort and control periods, which will last no longer than 5 minutes each. You will be asked to mentally attend to a feedback display and during effort periods, to modify that display in the instructed direction. During control periods, you will be asked to relax and clear your mind of all aspects of the experiment.

At the end of each session, the monitor will inform you about the results of the session and discuss with you various strategies for the next session.

At the conclusion of the study, you will be told the details of the analysis, the statistical outcome of your contribution, and the overall outcome of the experiment. At all times, the confidentiality of your participation in this experiment will be protected. Your name will not be used. Reference to you in records of this experiment and in any published results will be coded or in consolidated form. Storage of all records purtaining to your contribution to this study will be locked in cabinets within the SAIC Menlo Park facility.

Similar research in other laboratories has shown that no health risks are involved in participating in this type of experiment. This field of research, however, is deemed by some to have no scientific foundation. Some friends or colleagues, therefore, may consider your participation to indicate a belief in the occult or paranormal. While, to the knowledge of the investigators, no one has suffered career damage from participating in scientific research of the type we are proposing, you should realize that your credibility with some persons might be damaged if you should chose to reveal your participation in this experiment.

In addition, there is no reason to believe that, having participated in studies such as this you will be able to use your abilities for specific personal gain. Occasionally, participants come to believe that they possess the capacity to use so-called psychic skills for personal profit in risk-taking situations (e.g., participating in games of chance or speculative investments). Some individuals who have participated in experiments of this kind have acted on such assumptions to their apparent disadvantage. Thus, the risk exists that you may come to believe that you have a skill that you may not possess. You are advised of this risk and warned that you assume responsibility for any assumptions which you make about your personal skills or capabilities.

Emergency medical care is available if the need arises during your participation in this study at the SAIC facilities in Menlo Park, California. However, no additional medical care or compensation is offered to participants in the experiment. For emergency medical assistance at the SAIC facilities in Menlo Park, California, we will call the Urgent Care Center of Palo Alto Medical Foundation at (415) 853-2959 and explain the nature of the emergency and take appropriate action.

If this explanation leaves you with any unanswered questions, please ask and obtain answers satisfactory to you before signing below. If you have questions later, please call Dr. Edwin C. May at (415) 325-8292. An SAIC Institutional Review Board (IRB) composed of physicians and other knowledgeable persons has reviewed the plan of this study to ensure that you are protected to the maximum extent possible from any health risks that may be associated

with your participation in this study. Additional inquiries or comments may be addressed to the IRB Chairman, Dr. Garrison Rapmund, 6 Burning Tree Court, Bethesda, MD 20817, (301) 365-1419.

Your participation in the research is voluntary. You will be free to cease participation at any time. If you decide not to participate or you later withdraw from participation, there will be no adverse consequences for you.

After receiving the information provide above and the answers to my questions, I, _____, agree to participate as a subject in the activity described. I consent to the use and publication of any data or information resulting from my participation, provided that I am not personally identified. I further understand that additional information regarding the experiment will be available to me on request and that I may withdraw my consent to participate in this experiment at any time. I am an adult and am not presently under medication or treatment by a physician, except _____.

Your signature indicates that you have read and understood the above information, that your questions have been answered to your satisfaction, and that you have decide to participate based on the information provided. A copy of this form will be furnished to you.

_____	_____
Signature of Subject	Signature of Witness
_____	_____
Signature of Principal Investigator	Date

ENCLOSURE 3

Effects of the Sender on Anomalous Communication in the Ganzfeld

Research Protocol

Charles Honorton

Psychophysical Research Laboratories
and the University of Edinburgh

Approved For Release 2000/08/08 : CIA-RDP96-00789R003100260001-9

Project Overview

The objective of this project was to develop a detailed protocol for experimental assessment of the effects of a sender on anomalous communication in a ganzfeld setting. This objective has been realized through the completion of three tasks:

- A meta-analysis of existing ganzfeld communication research was performed and used in a statistical power analysis to estimate the sample sizes needed to reliably detect (a) an overall anomalous communication effect and (b) a difference between sender and no sender conditions (Honorton, 1992). Given the effect size associated with the overall ganzfeld effect, the power analysis indicated that 95% reliability should be achievable in studies employing at least 200 trials. The small number of studies without senders, while limiting the usefulness of meta-analysis of sender impact from the existing data, nevertheless indicates that overall evidence for anomalous communication in the ganzfeld is present only in the subset of studies using senders.

- Meta-analysis of moderator variables in this domain indicates a reliable correlation between performance in anomalous communication tasks and the psychological trait of extraversion. Less certain but reasonably consistent evidence was also found supporting the predictive utility of abundance of self-reported anomalous experiences, history of prior testing, involvement with mental disciplines such as meditation, and certain other personality dimensions (Honorton, in press).

- Informed by the above meta-analytic studies, development of an automated, computer-based testing system and protocol for new studies sender effects in anomalous communication. The testing system and protocol are described in this document.

Study Design

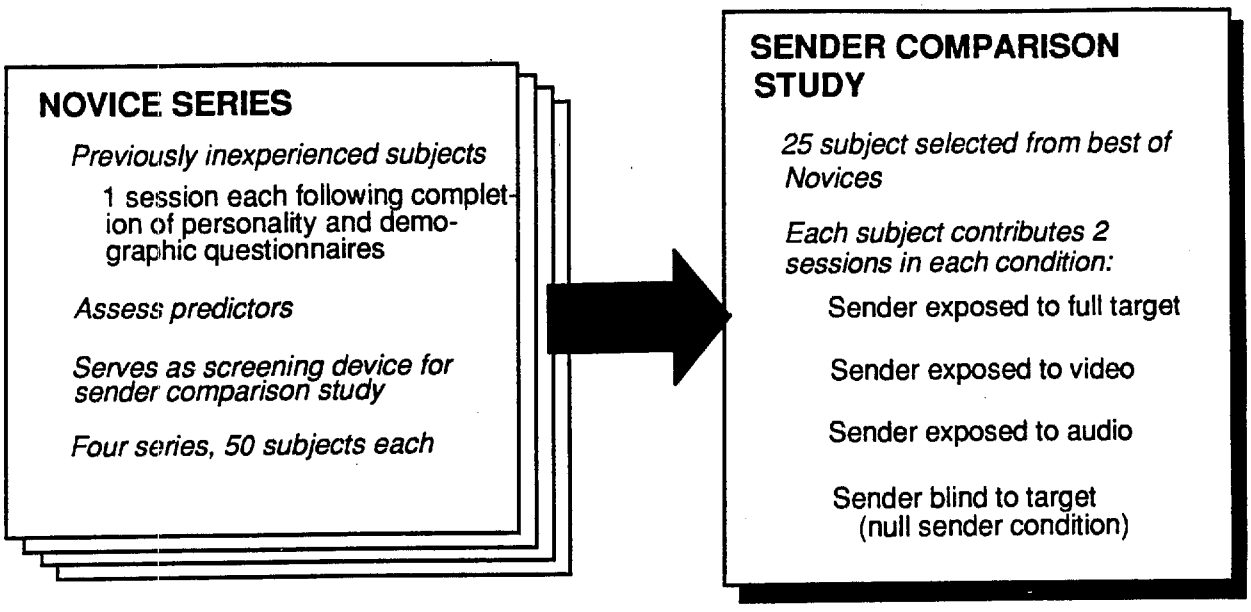
The basic research methodology and design comply with the PRL design described by Honorton, Berger, et al. (1990). A new video ganzfeld control system has been developed with modifications to enable double-blind sender comparisons. (See **Video Ganzfeld System.**) New target pools have been created and coded to enable quantitative characterization of targets. (See **Target Stimuli.**)

The project involves two interrelated types of studies. *Novice* studies provide initial training in ganzfeld communication tasks for previously inexperienced subjects. The novice studies form the primary basis for selecting subjects for the sender comparison study. The novice studies are conducted in four *series*. In each series 50 novice subjects or *receivers* complete one ganzfeld session involving full target presentation to a sender. A secondary function of the novice series is to test refinements in predictor measures. (See **Predictors.**)

Successful novices will be asked to participate in the sender comparison study. Rather than simply comparing performance with and without a sender, we have opted for a more informative comparison of sending modes in which a sender is always physically present. Instead of varying the presence or absence of the sender, we will vary the degree of target information available to the sender. Since we are using dynamic video stimuli, each target has

both visual and auditory components, enabling comparison of four conditions: Video+audio ("Full target") components presented to sender, Video only, Audio only, neither component ("Null sender" condition). The specific condition for a given session is randomly selected and unknown to either experimenter or subject until the end of the session. (See Figure 1.)

Figure 1. Study Design



Video Ganzfeld System

The video ganzfeld system is a second-generation hardware/software control system for the study of anomalous communication in the ganzfeld. It is essentially an updated version of the PRL automated ganzfeld system (Honorton, et al., 1990), providing automated computer control of major aspects of the ganzfeld session, including:

- Random selection of the target in novice series
- Random selection of sender condition in sender comparison series
- Automated VCR control and presentation of the target (or target element) to the sender during sending periods
- Presentation of judging pool (target and decoys) to receiver (subject) and experimenter during the post-session blind-judging procedure
- Presentation of judging rating scales and registration of blind-judging responses
- Data recording and storage
- Automated presentation of subject feedback following blind-judging and data recording

The system also includes modules controlling series design and subject registration which are described below.

Hardware System

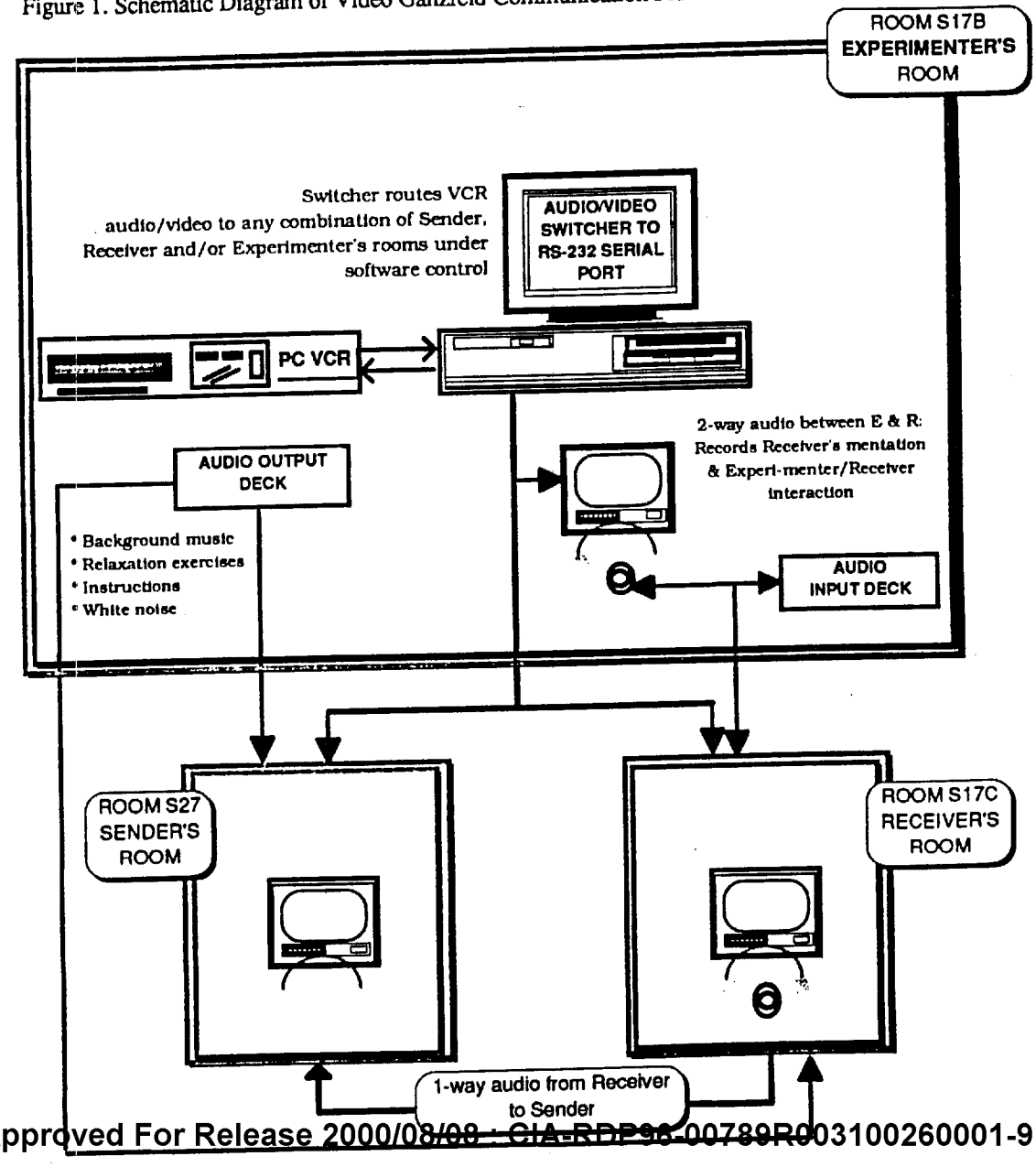
The video ganzfeld system runs under Microsoft Windows 3.1/DOS 5 on a 33MHz 80386DX computer. The computer is equipped with a 210 MB fixed disk, 8 MB DRAM, four RS 232 serial ports, an 80387 numeric coprocessor, and a super VGA monitor. The video subsystem has onboard

genlock capability to enable transfer of the VGA graphics screen to an NTSC composite monitor in the receiver's room.

The target presentation subsystem is an NEC PC/VCR, a frame-accurate NTSC videocassette recorder with an onboard RS 232 serial interface. All VCR functions are controlled via computer software. Custom-designed video switchng circuitry enables the computer to route VCR video and audio signals (as well as the computer graphics screen) to any combination of the three experimental rooms (experimenter's monitoring room, receiver's room, sender's room). Each room is equipped with a 14 in. Panasonic color monitor and headphones.

Two audio cassette decks are used. One deck enables two-way audio communication between experimenter and receiver, and records the receiver's mentation report during the session as well as any interaction between experimenter and receiver. The other audio cassette deck plays prerecorded relaxation exercises, session instructions, and white noise during the session. One-way audio communication from receiver to sender enables the sender to monitor the receiver's mentation report during the session. Figure 2 provides a schematic diagram of the communication flow during the experimental session.

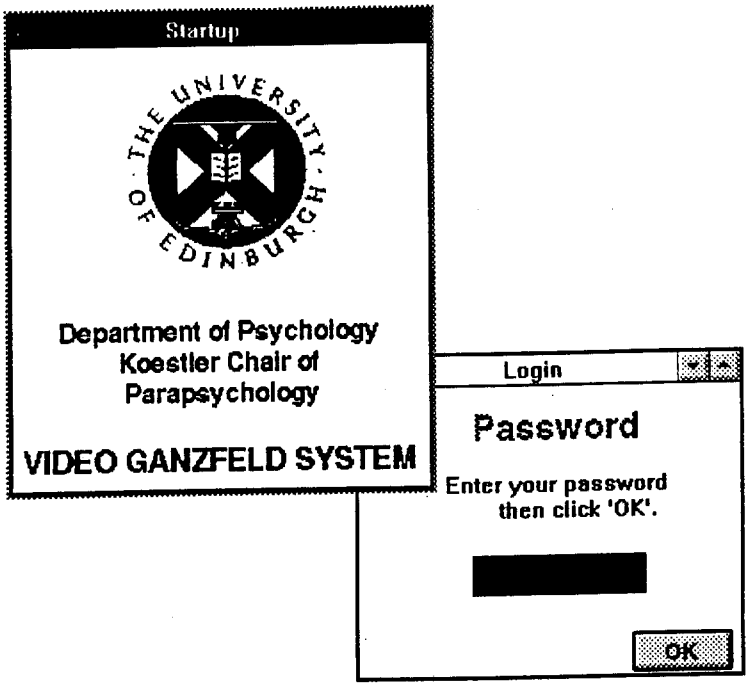
Figure 1. Schematic Diagram of Video Ganzfeld Communication Flow



Software System

The video ganzfeld software runs under Microsoft Windows 3.1. The initial startup sequence requires the experimenter to enter a valid security password. (See Figure 3.) The system automatically terminates if a valid password has not been entered.

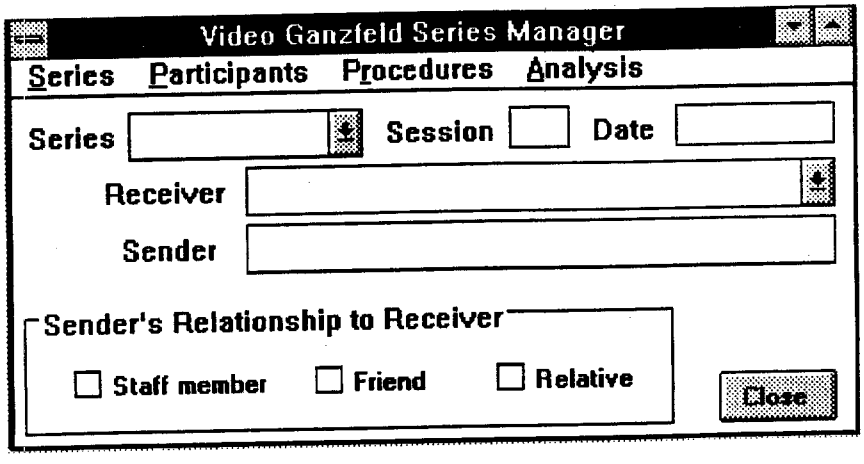
Figure 3. System Startup Sequence



Series Manager

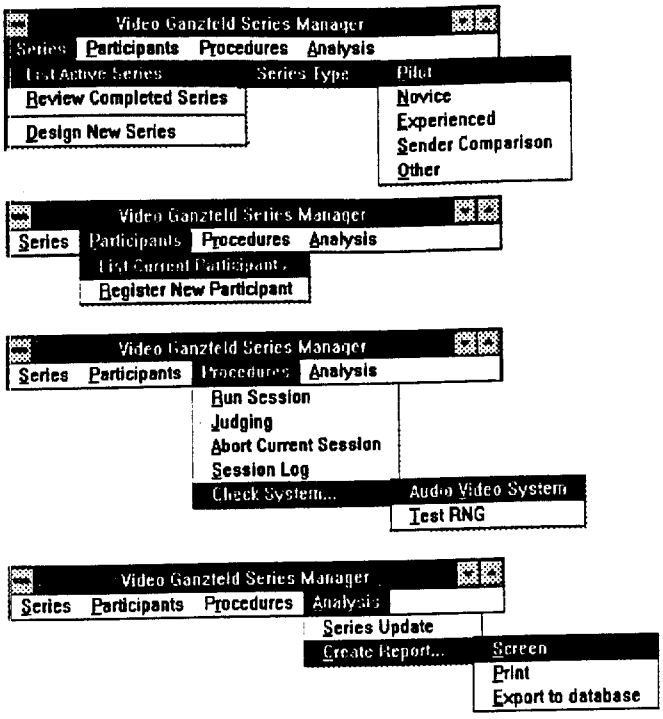
Upon entry of a valid password, the Series Manager is loaded. Series Manager is the central control program. It enables the experimenter to design new experimental series, register new subjects, run experimental sessions, and export data files to database management packages. (See Figure 4.)

Figure 4. Video Ganzfeld Series Manager



The Series Manager screen is shown in Figure 5. Each of the major menu components is described below.

Figure 5. Series Manager Menu Structure



Series

The Series menu allows the experimenter to list currently active experimental series, review completed series, and design a new series. The Series Design option is the most important function in this menu. It provides the only means through which a new experimental series can be created and requires advance specification of the study sample size (number of trials and subjects), the series type, and the target display (sender) mode:

- **Full Target:** The sender will be exposed to both the video and auditory components of the target episode
- **Sender Comparison:** The system randomly determines whether the sender is to be exposed to the full target, its video component, its auditory component, or a blank screen (null sender mode)

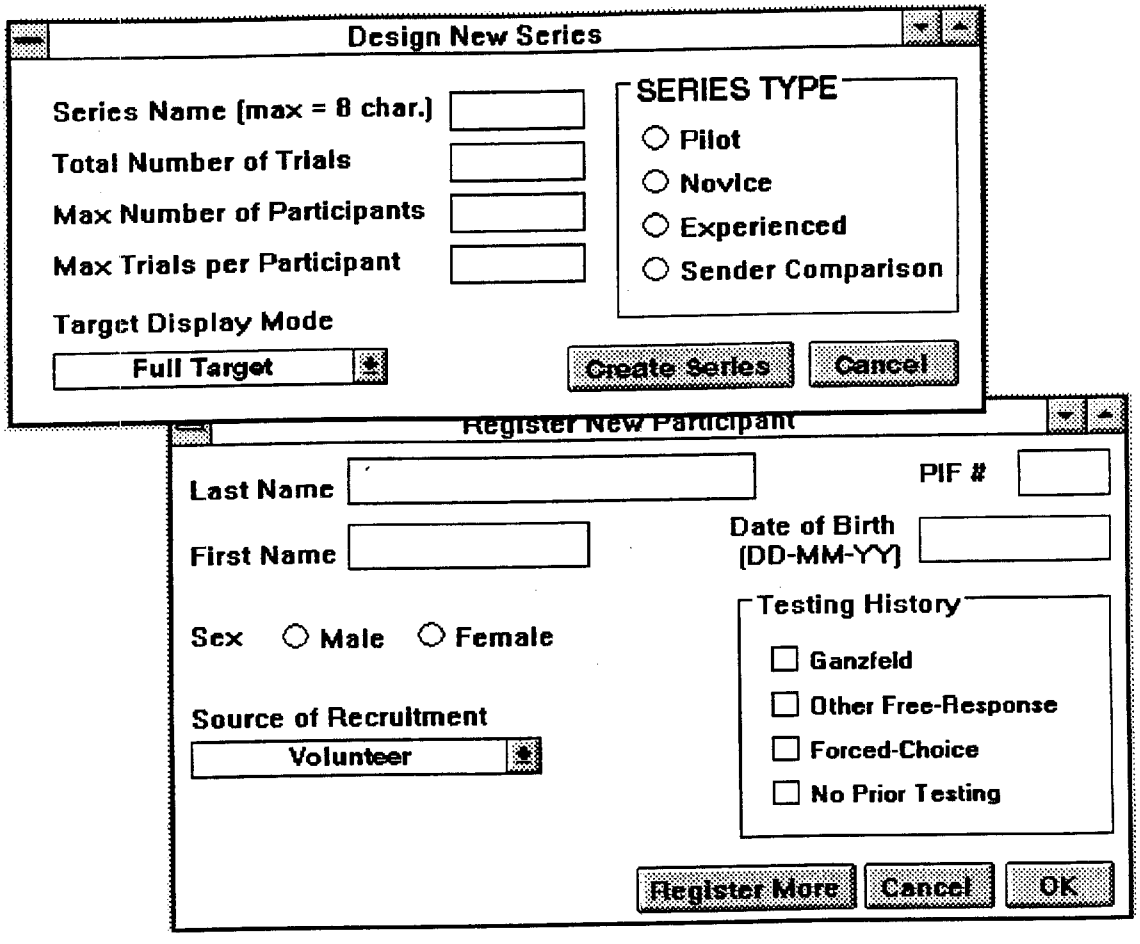
Data input validation routines check for inappropriate or contradictory input (e.g., that the product of the maximum number of participants and maximum number of trials per participant does not exceed the total number of trials). The Series Design parameters are stored in a series startup file. The file is read into memory when the series is selected from the Series Manager and the system checks to insure that the specified sample size and maximum trials per subject are not exceeded in the series.

Participants

The Series Manager Participants menu allows the experimenter to list current participants in the selected series and to register new participants. In experiments in which each subject contributes multiple sessions, the list of current participants

The Participant Registration option provides the only valid means by which new participants can enter an experimental series. Upon selecting this option, the experimenter is presented with a dialog box which prompts him to enter the subject's name, a unique identification (PIF) number, the participant's sex, date of birth, source of recruitment into the study (from a standardized list), and prior testing history. As with the Series Design dialog, data input validation routines are used to insure appropriate input and check for contradictions (e.g., checking "No prior testing" and one of the other prior testing options). The Series Design and Participant Registration dialogs are shown in Figure 6.

Figure 6. Dialogs for Series Design and Participant Registration

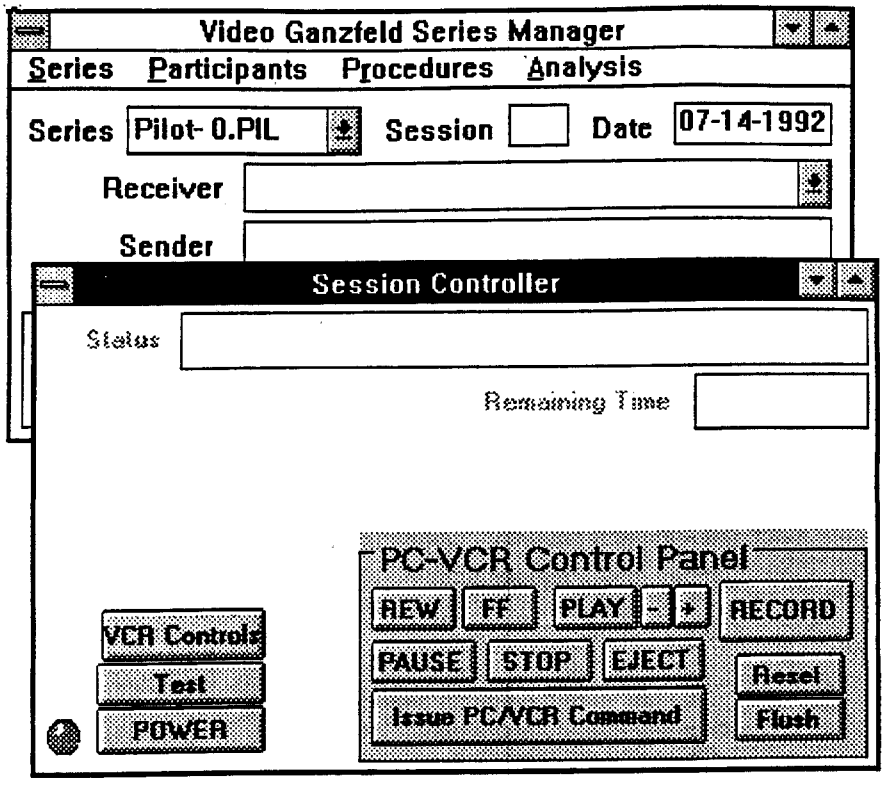


Procedures

The primary options available on the Procedures menu enable the experimenter to run a session and to initiate the blind-judging procedure at the end of the session.

When the experimenter selects "Run Session" from this menu, Series Manager opens a Session Controller window (Figure 7).

Figure 7. Video Ganzfeld Session Controller



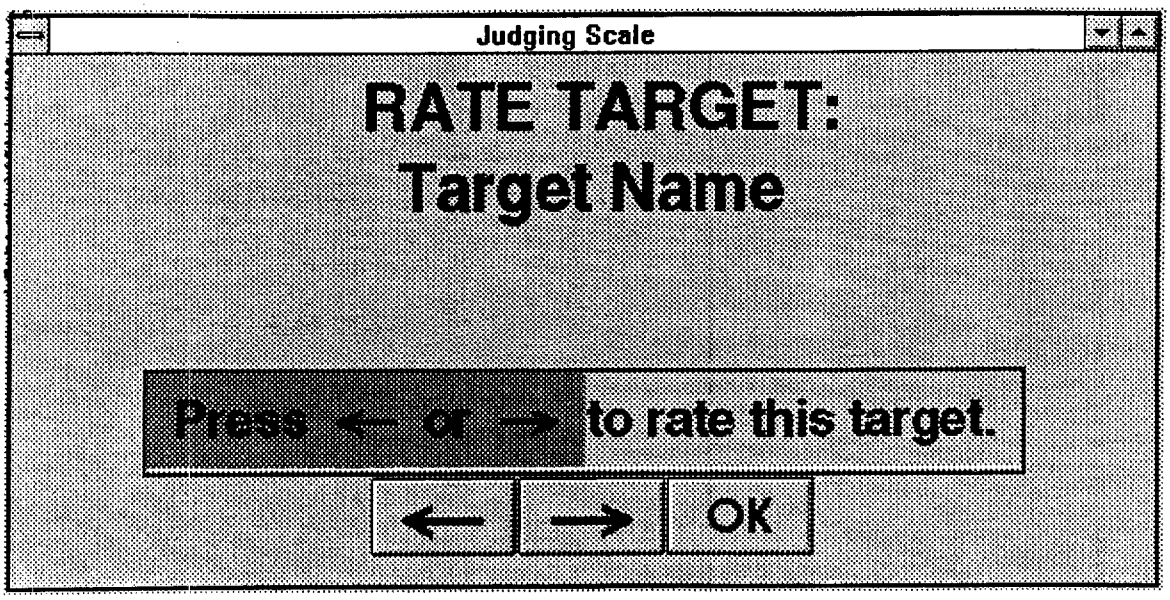
The experimenter turns on the PC-VCR by clicking the "POWER" button. The session is begun when the experimenter clicks "RUN." After randomly selecting a target for the session, the Session controller reads a file containing the digital addresses of each target in the pool. The program verifies that the proper videocassette target pool has been inserted into the PC-VCR, then searches for the target on the videocassette and places the PC-VCR into pause mode. The system clock is used to time the onset of each of the six sending periods in the session. Fifteen seconds prior to each sending period, the program uses the PC-VCR character generator to display a message on the sender's monitor, announcing that a sending period is about to begin, then displays the target on the sender's monitor. In sender comparison studies, the system performs another randomization to determine whether the sender will be shown the complete target, the target video component, audio component, or a blank screen, then routes the appropriate target element to the sender's monitor. At the end of the sending period, the program rewinds the videocassette to the beginning of the target and the PC-VCR is placed in pause mode. This procedure is repeated for each of the six sending periods

The Session Controller provides the experimenter with a count down of the number of minutes remaining in the session.

At the end of the session, experimenter and receiver, communicating via intercom link, review the receiver's mentation. The experimenter then selects Judging from the Series Manager Procedures menu. The program displays each of the four possible targets on both experimenter's and receiver's TV

random sequences. The receiver is prompted to identify whatever correspondences they perceive between their ganzfeld mentation and each of the four potential targets. The receiver is given the option to view any or all of the elements in the judging pool as many times as desired, then procedes to perform the blind judging task. The program displays a judging scale (Figure 8) on the receiver's monitor for each of the four possible targets in the judging pool. The judging scale shows a brief descriptive name for each target, a thermometer-style rating scale, and three buttons. Using a mini-joystick, the receiver rates the degree of perceived similarity between each potential target and their mentation. The scale ranges from 0% to 100% and the current value of the scale is displayed both numerically and graphically as the receiver clicks either the left or right arrow buttons.

Figure 8. Video Ganzfeld Judging Scale



When the receiver is satisfied with the rating assigned, she or he presses the "OK" button. The judging procedure is repeated for each of the four potential targets in the judging pool. The program checks for tied ratings and prompts the receiver to re-rate in the event of a tie. Once the receiver has rated all of the elements in the judging pool, the program converts the ratings to ranks and stores the ratings and ranks as fields in the session database record. The program calculates a standardized rating (*z*-score) based on the difference between the rating assigned to the correct target and the mean of the three decoy ratings divided by the standard deviation of of all four ratings (Stanford & Sargent, 1983).

The program times the duration of the judging procedure from initial presentation of the four judging pool elements to completion and adds it to the session database record.

The Series Manager Procedures menu includes three additional options: "Abort current session," "Session log," and "Check System." The abort session option is

used to terminate an ongoing session prior to completion. Premature termination of a session may only occur in the event of a protocol violation (e.g., sender or receiver leaving their respective rooms after the beginning of the session), equipment failure, or an emergency situation. When "Abort session" is selected, the system displays a dialog box prompting the experimenter to enter his or her security password and indicate the specific reason for terminating the session. This information, along with the the participant's ID, and the date and time are written to a series abort file. Abort session is not available after the blind judging procedure has been completed.

Session log enables the experimenter to register comments concerning the current session and "Check System" performs diagnostics on the audiovisual and randomization functions of the system.

Target Stimuli

Target Pool

Following Honorton, et al., (1990), target stimuli consist of brief (35-80 sec.) video excerpts from a variety of films and documentaries. Two target pools, each containing 40 targets (10 judging pools of four targets each), have been prepared. Each target pool is stored on one 90-min. .5 in. VHS videocassette tape. Digital addresses on each videocassette enable frame-accurate access of targets via the video ganzfeld/PC-VCR computer link. A unique digital header is recorded on each videocassette and is read by the computer at the onset of each experimental session. Accidental insertion of a videocassette other than that containing the designated target pool is automatically detected and results in termination of the session.

Based on an analysis of target success-rates in the PRL experiments, approximately half of the targets were taken from among the most successful PRL dynamic targets. The remainder of the targets are new. Pool A will be exclusively used for the Novice Screening Series and Pool B will be used for the Sender Comparison Series. Since the latter series will include sessions in which the sender will be exposed only to the audio soundtrack portion of the target, the elements in Pool B include a high proportion of targets with descriptive narration.

Measurement of Target Attributes

The quantification of complex target material has long eluded investigators of anomalous communication. The quantitative characterization of target attributes is important for a number of reasons, for example:

- Development of more statistically powerful methods for assessing target/description correspondences,
- Detection and elimination of targets associated with strong response bias (i.e., targets that tend to be selected or rejected because of their intrinsic characteristics),
- Detection and elimination of targets that activate perceptual defense,
- Identification of targets that are excessively difficult to describe,

- Identification of elements of target environments that may be especially amenable to retrieval via anomalous communication.

Recently, major advances have been made with regard to certain aspects of this problem as it specifically applies to remote viewing studies (May, et al., 1985; 1990). While aspects of May's conceptual schema can also be applied to ganzfeld research, there are two aspects of the latter that call for a somewhat different approach: (1) The standard ganzfeld mentation protocol focuses upon the elicitation of unconstrained spontaneous imagery rather than an explicit focus upon describing the target. (2) The video targets are themselves quite different from those typically used in remote viewing research: They include auditory components (e.g., music, dialogue, narration, sound effects), occasionally major transitions in perspective, highly evocative dramatic and comedic scenes, etc.

For these reasons, we have adopted a somewhat different approach, consisting of two distinct aspects: (1) Specific descriptors tailored to the content of the target pools, and (2) generic characteristics derived from environmental psychology.

Content-based Descriptors

Each target has been coded with respect to Theme, Tone, and Content. Each item is coded

Table 1. Content-based Descriptors

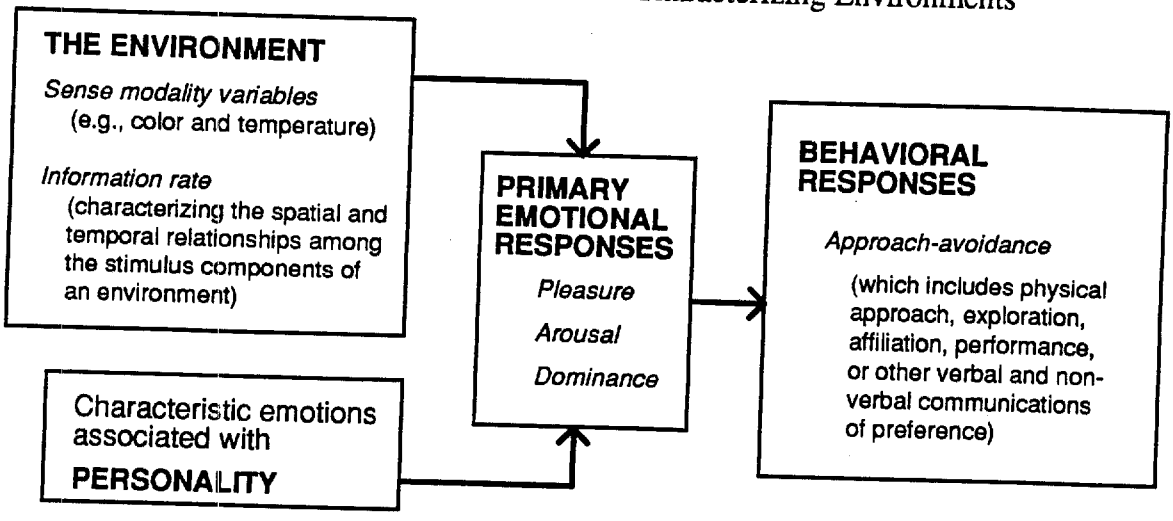
THEMES	Nature/wildlife Fantasy/religion/mythology Aggression/battles/warfare/conflict Social interactions Sports/athletics/acrobatics Art/dance/music Places/travel/exploration Cartoons/animation
TONE	Humor Documentary Action Drama Wonderment/awe Light entertainment
CONTENT	People Animals Fantasy/mythical characters Water Rocks/hills/mountains Trees/flowers/foliage Land vehicles/scenes Terrestrial flight scenes Underwater vehicles/scenes Architecture/urban scenes Technology/objects/devices/tools Space/planets/galaxies

on a four-point scale, where 0 = absent, 1= present, 2= prominent, and 3=dominant. (See Table 2). The content-based descriptors are used (a) in construction of orthoginal judging pools and (b) in exploratory analysis of target attribute correlates of anomalous communication.

Generic Characterization of Targets based on Environmental Psychology Approaches

The above approach represents what Mehrabian and Russell (1974) describe as "the most common, but least parsimonious, approach... the use of the everyday language of specific events and entities" (p. 6). They point out that this approach does not permit comparison across environments, "... and it is impossible to analyze behavioral changes as functions of changes in environments so described" (p. 6). Mehrabian and Russell survey a wide array of evidence pointing to the advantage of generic characterization of environments in terms of the primary emotional responses they elicit and a (psychologically-based) measure of information rate. Their general framework is illustrated below in Figure 9.

Figure 9. Mehrabian & Russell Framework for Characterizing Environments



After Figure 1.1 of Mehrabian & Russell (1974).

Within this framework, environments are coded using semantic differential scales measuring the three primary emotional responses (pleasure or evaluation, arousal or activity, dominance or potency) and information rate. The scales are reproduced in the appendix. Each of the targets has been coded on these four scales. We believe that this approach may provide a basis for broader comparison across laboratories and target sets than more traditional methods. It of course remains to be seen how useful it will be as a predictor of success in anomalous communication.

Predictor Measures

Extraversion and Openness to Experience

Performance in anomalous communication tasks has been found to correlate with the psychological trait of extraversion in a recent meta-analysis of 15 studies by five independent investigators (Honorton, Ferrari, & Bem, 1990). The mean correlation is small (r = .20) but consistent across investigators, studies, and personality measures.

While the meta-analysis provides strong evidence that a relationship exists between anomalous communication and extraversion, it is silent as to the nature of the relationship. Extraversion is commonly associated with sociability (gregariousness), but it is now known that there are at least five other components of extraversion. For this reason, we have chosen the NEO Personality Inventory (Costa & McRae, 1985), an instrument that measues six facets of extraversion. Recent research implicates sensation seeking as an instrumental factor in the ganzfeld experience (Glicksohn, 1991) and we are especially interested in the possibility that it also correlates with performance in anomalous communication tasks. We also will use the NEO PI Openness scale, and its six facets, because a number of studies have indicated a relationship between anomalous communication and various measures of openness to experience. Table 2 lists the six facets of extraversion and openness.

Table 2. Facets of Extraversion and Openness

Scale	Facet
EXTRAVERSION	1. Warmth 2. Gregariousness 3. Assertiveness 4. Activity 5. Excitement Seeking 6. Positive Emotions
OPENNESS	1. Fantasy 2. Aesthetics 3. Feelings 4. Actions 5. Ideas 6. Values

A computer program scores the questionnaire and presents graphic profiles for each of the six facets of extraversion and openness. Statistical power analysis (Cohen, 1977) indicates that a sample size of 200 subjects will achieve a 90% likelihood of detecting a correlation of .2 at $p<.05$. With $N \geq 200$, the critical value of r ($p \leq .05$) is within the 95% CI of the meta-analysis.

Other Moderators

Meta-analysis of three novice experiments in two independent laboratories indicates that initial anomalous communication performance in the ganzfeld is related to four other factors (Honorton, in press):

- The number of types of personal "psychic" experiences subjects believe they have had,
- Experience with mental disciplines such as meditation,
- Classification as Feeling/Perception on the Myers-Briggs Type Indicator, and
- Prior formal testing involving anomalous communication tasks.

Across the three studies, only 15 subjects (about 5%) satisfied all four predictors, but 11 of them successfully identified their targets (effect size = 1.03). When the least frequently satisfied condition (prior testing) was eliminated, 99 subjects in the three studies satisfied the remaining three predictors, with an effect size of .39. Subjects who did not satisfy the three-predictor model (N = 190) produced a nonsignificant effect size of .07.

Myers-Briggs Feeling/Perception is highly correlated with the NEO Openness Scale used in this study. We have developed more refined items regarding reported personal anomalous experiences, prior laboratory testing, and mental disciplines. Prior to contributing to the novice series (total N = 200), subjects will complete the NEO-PI Extraversion and Openness scales and a demographic survey incorporating measures of personal experiences and prior testing. If the predictive utility of these factors is confirmed in the new novice series, a composite predictor measure will be used in addition to novice target acquisition to select subjects for the sender comparison study.

Subjects

Previous research also indicates that artists and musicians are particularly successful in anomalous communication tasks (Schlitz & Honorton, 1992). For this reason, we will recruit as many subjects as possible from University music and arts departments and local creative and performing arts groups.

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Appendix

Semantic Differenetial Scales Used for Generic Target Characterization (Mehrabian & Russell, 1974)

I. Primary Emotional Responses

Instructions: Take a few moments to really get into the mood of the situation depicted in the target episode; then rate your feelings in the situation with the adjective pairs below. Some of the pairs might seem unusual, but you'll probably feel more one way than the other. So, for each pair, put a check moark close to the adjective which you believe to describe your feelings better. The more appropriate the adjective seems, the closer you put your check mark to it.

TARGET NAME | TAPE | TAPE ADDR. (START : END)

RATER

EVALUATION

Happy		Unhappy
Pleased		Annoyed
Satisfied		Unsatisfied
Contented		Melancholic
Hopeful		Despairing
Relaxed		Bored

ACTIVITY

Stimulated		Relaxed
Excited		Calm
Frenzied		Sluggish
Jittery		Dull
Wide-awake		Sleepy
Aroused		Unaroused

POTENCY

Controlling		Controlled
Influential		Influenced
In control		Cared-for
Important		Awed
Dominant		Submissive
Autonomous		Guided

II. Information Rate

Instructions: Please use the following adjective pairs to describe the situation depicted in the target episode. Each of the following adjective pairs helps define the situation or the relation among the various parts of the situation. Put a check mark in one of the boxes to indicate what you think is an appropriate description.

Varied		Redundant
Simple		Complex
Novel		Familiar
Small-scale		Large-scale
Similar		Contrasting
Dense		Sparse
Intermittent		Continuous
Usual		Surprising
Heterogeneous		Homogeneous
Uncrowded		Crowded
Asymmetrical		Symmetrical
Immediate		Distant
Common		Rare
Patterned		Random